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ABSTRACT

This paper describes the steps taken and the discoveries made by one school district in its implementation of computer-based education and office management systems. Topics covered include: (1) the formation and responsibilities of the Instructional Technology Committee (ITC) in budgeting, purchasing, and planning staff development programs; (2) the educational philosophy and goals established by the ITC; (3) sources of funding for equipment and implementation; (4) methods of involving parent organizations; (5) the development of school computer labs to meet the needs of individual schools; (6) the implementation of Technology in the Curriculum (a program developed by the California State Department of Education); (7) computer-based management of an academic student standards assessment program; (8) recommendations for the successful implementation of an IBM Office Management system (IBM XT and AT computers); (9) planning staff computer training programs; and (10) advice to other school districts planning the implementation of computer-based education and office management systems. (IW)

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HEMET UNIFIED SCHOOL DISTRICT

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Kids, Computers, and Beyond:

The Hemet Experience in Technology-Based Education and Office Management Systems

EA 019 147

DIVISION OF EDUCATIONAL SERVICES
Office of Instructional Support

Jack Robinson

Presented at the Annual Meeting of the California Educational Research Association (65th, Marina del Rey, CA, November 13-14, 1986).

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HEMET UNIFIED SCHOOL DISTRICT

A BRIEF HISTORY

In the spring of 1981, teachers and administrators began to ask many questions regarding the use of computers in education. Typical of such questions were whether we should have computers in each classroom or in one school "lab," how many computers should there be, what brand of computers should we buy, should we have monochrome or color monitors, how could we use computers in the school office, and, most importantly of all, what do we want computers to accomplish for students and school staff?

The purpose of this paper is to explain how we went about answering these and many other related questions with the hope that by so doing we can be of assistance to other districts who find themselves facing the same questions and dilemmas we have faced and sought to resolve.

It is not our intent to claim that we have found the "ultimate formula" to the solutions of such complex issues, rather we offer some thoughts and suggestions pertaining to what has been successful in the Hemet Unified School District and how we arrived at some of these solutions. It is extremely important to bear in mind that the field of technology is a fantastically and rapidly growing one, and that with each new development and application comes a new and fascinating set of challenges.

THE INSTRUCTIONAL TECHNOLOGY COMMITTEE (ITC)

During the 1982-83 school year, our district created the Computer Curriculum Committee. Within two years we began to see such rapid development of different types of technology relative to educational applications that we changed the group's name to the Instructional Technology Committee.

The committee was, and still is, made up of a teacher from each of our twelve K-12, and soon to be thirteen, schools. Site and district level administrators were also represented on the committee. Parent involvement was included by open invitation and by feedback through the teachers and/or administrators serving on the committee.

The ITC was given the responsibility of:

A. Developing a K-12 Computer Technology Curriculum Continuum with annual updates, if needed.
B. Establishing, adopting, and implementing a multi-year plan of instructional technology budget that supports and enhances the district-adopted curriculum through providing students and staff with Computer Literacy, Computer-Assisted Instruction, and Computer-Assisted Management.
C. Assisting with the selection, acquiring, and utilization of the most appropriate instructional technology programs, and facilities to accomplish the multi-year plan in its various stages of implementation.
D. Planning staff development programs that support the multi-year plan through a design specifically constructed to meet our local curriculum goals, utilizing the unique benefits of the California State Department of Education's Technology in the Curriculum (TIC), which will be described in more detail later.

THE NEED FOR A MISSION

As the ITC began its work, it became apparent that the district needed to develop a specific mission or philosophy involving the implementation and continued use of appropriate educational technology. The ITC and other interested individuals then began developing such a mission. Evolving out of this work was the idea that all students in the Hemet Unified School District were to have an opportunity to become computer literate, in other words, gain a basic understanding of computer operations, applications, and implications in the world around them. They should also be taught that technology will continue to evolve and that there are many applications and new technologies that have not yet been conceived but will eventually have an impact on their lives.

The need to enhance office efficiency through technology was addressed and will be discussed later.

HOW MUCH WOULD THIS ALL COST AND WHERE WOULD WE GET THE MONEY?

Hemet Unified School District consists of 10,000 students in 14 schools (preschool through adult education), with several new schools planned in a rapidly growing community. We are not endowed with a broad industrial economic base nor are we considered a "wealthy" school district. With our growth demanding more schools, personnel, and money, the question naturally arose as to how we would be able to afford computers, software, peripherals, and other related items.

In 1982 we had 18 computers; by the end of the 1986-87 school year we will have over 500, almost all of them being Apple IIe systems. There is over $500,000 invested in this hardware and another $250,000 in our IBM office management system.

From where did we get the money? Before answering that question, it must be noted that our district has a Governing Board, superintendent, and district administration that endorse and support the concept that technology can and does provide a highly effective means of assisting students and staff in the teaching, learning, and managing process. Keeping this in mind, our funding for technology came from several sources: almost 40% from special funding (technology grants, Chapter I, California School Improvement Program, etc.), 30% from donations (primarily from parent-teacher organization fund-raising activities), 15% from California lottery proceeds, 11% from the district's General Fund, and 4% from individual school funds.

It is important, therefore, to understand that funding for educational technology implementation can and should come from a number of different resources. As is the case in many school districts, we have numerous parent organizations who fully endorse the use of instructional technology and are willing to put in the time and effort to help generate funds for that purpose.

In working with such organizations, it is critical to keep them informed as to <u>what</u> equipment is needed and <u>why</u>. In doing this the following information should be made available to them:

1. What the educational benefits of the equipment will be.
2. How the equipment will be implemented and used in the curricular area(s).
3. What specific equipment is needed.
4. Why that type of equipment is needed.
5. Provide the organization plenty of time to ask questions and make suggestions regarding your request.

THE SCHOOL COMPUTER LABS

As mentioned earlier, a dilemma our district faced early in the computer development phase was whether we should organize a school computer lab at each school or place a computer in every classroom. The more the Instructional Technology Committee, principals, other teachers and involved individuals discussed this issue, the more apparent it became that a school lab would be the most appropriate for our district's needs. The reasons for this decision were:

1. Our high school had been using the lab concept for about a year and had been meeting with much success in terms of student interest and the curriculum taught.
2. Having a lab would allow an entire class of students to "experience" the computer at one time for concentrated computer instruction.
3. A number of teachers were still uncomfortable with using a computer in their room, while others wanted a number of computers in theirs.
4. The computer lab teacher and/or aide would have the knowledge necessary to operate a successful computer program.

Every school now has a computer lab with approximately 20-30 Apple IIe systems and approximately 2-4 printers. We began with monochrome green screen monitors but now are recommending color

monitors in the elementary grades. Quality software is now available which asks students to identify various objects and their colors, as well as software which effectively uses color to enhance the students' interest of the material being covered.

The labs are operated by computer resource teachers, classroom teachers, and/or instructional aides under teacher supervision.

The labs' curricula are varied. The Instructional Technology Committee, through a school board-approved plan, has specified certain basic computer literacy components to be covered. Beyond these, however, we want our schools to develop a curriculum that reflects that school's particular needs. Some schools teach a curriculum which reflects specific school-wide goals established by the School Improvement Program (SIP) and/or various needs assessments. Other schools utilize the lab as an "extension" of the regular classroom, i.e., sending students to the lab to enhance specific skills and abilities. All lab personnel devote a portion of their time to keyboarding and word processing skills.

TECHNOLOGY IN THE CURRICULUM (TIC)

This program was developed by the California State Department of Education, Office of Educational Technology. It covers the core curricular areas of math, science, social science, and language arts/reading.

This was a massive undertaking which eventually linked over four hundred high quality commercial software programs, instructional television, and other technologies with the state's Curriculum Frameworks (recommended curriculum for California) for those subjects mentioned in the preceding paragraph.

Three teachers in our district (Judy Mercer, Bud Hardesty, and Kathy Gerry) received special training at a state-wide institute to introduce this new program to California schools and to teach them various ways of implementing TIC into their districts.

Any reference to technology in the Hemet Unified School District without mentioning the TIC program would certainly be incomplete.

This program answers the "age-old" question that teachers so frequently ask: "How do I implement a computer (or any other technology, for that matter) into my classroom curriculum and what should I use to teach it?" This program is the nucleus and foundation for our instructional technology staff development program in Hemet.

Each of our schools sends between two and four teachers (depending on size) to be trained by our TIC team. In selecting the teachers for training, principals were told that their teachers need not be computer proficient or even have ever used one before, only that they need to have a desire to implement instructional technology into their classroom.

We decided to give these new teacher trainees the title of "Resident Experts." Since a good number of the Resident Experts have had very little technology experience, they were quite amused at being referred to as experts. Since the beginning of the program this past September, however, these teachers have responded enthusiastically to the TIC concept and feel confident about their new title.

There are various ways a district can implement TIC. The following describes the implementation plan we designed for Hemet.

Approximately every two months we offer a full day training session for our Resident Experts. One day is reserved for elementary teachers; one day for secondary. Between 25-30% of the session is reserved for sharing of activities at each school regarding how TIC is being used. At this time the teachers discuss program successes at their school, what challenges they have encountered, and ways they can overcome these challenges and strengthen their program. A district administrator also attends the session to provide necessary support and assistance. The remaining 70-75% of the time is spent in learning about new TIC software or instructional television programs. This is a "hands-on" experience with the teachers in the role of student and the TIC trainers in the role of teacher.

The Resident Experts then take this information back to their schools and train their teachers. Typically, an appropriate amount of time is provided at a faculty meeting to

accomplish the training or special training sessions are set up after school. In some instances, schools will use their total School Improvement/Professional Growth Day (two per year) to concentrate on TIC training.

The TIC program has met with an enthusiastic response from teachers for a number of reasons, some of which are:

1. Critical thinking skills are emphasized throughout the entire program.
2. Cooperative learning/small group interaction skills are enhanced through TIC.
3. Several different types of technologies are integrated within TIC, which helps to match children's different learning styles.
4. Quality software has been carefully integrated with California Curriculum Frameworks.
5. A "safety net" of staff development has been planned for our Resident Experts. Support is always available either through district training meetings, individualized assistance from TIC trainers, or from colleagues at various school sites.

Perhaps the best summary of the Technology in the Curriculum Program would be to say that instructional technology has not only its advantage of assisting the classroom teacher, but it also has the tremendous potential to make learning fun. Technology serves as a powerful tool to engage and focus the learner with the appropriate core curriculum skills, while keeping in mind that the teacher is always at the center of the teaching/learning process.

COMPUTER-BASED MANAGEMENT OF ACADEMIC STUDENT STANDARDS

California law requires its school districts to adopt standards of expected student achievement in all curricular areas. To accomplish this, our district began a major undertaking utilizing the expertise of literally hundreds of our teachers, school site and district administrators, and school board members.

The task was to integrate the critical subject areas of the state curriculum frameworks, state Model Curriculum Standards, California Assessment Program (CAP), and Stanford Achievement Test (a nationally normed test) with specific academic goals of our own district.

With the major portion of that work done, we needed to move into the standards assessment development phase. Through the assistance of a private consulting firm made up of former and current educators, we have begun designing the assessment document. That document will be field tested this spring utilizing a matrix sampling of all grades in our district.

Upon completion of the assessment development process we will use our IBM office systems to manage the assessment program, the software for this system being of a data base-type "custom made" for our district. The system will provide the management capabilities to:

1. Generate and score practice tests for any or all performance indicators (objectives) within a grade level.
2. Generate and score placement tests, which will assist teachers in finding the appropriate placement for new students.

3. List every performance indicator for every grade level, explaining its item stem characteristic, distractor characteristics of the question, an example question and its answer.

   EXAMPLE: A fourth grade math performance indicator is: Given a problem, the student will count change back not to exceed 50 cents.

   - ITEM STEM: The item stem will consist of a problem concerning money with change under 50 cents and a question asking the student to identify the correct change.
   - DISTRACTOR CHARACTERISTICS: The distractors will consist of answers with the incorrect change.
   - QUESTION SAMPLE: A ball costs $4.95. How much change would you receive from five dollars?

     A. 5 cents
     B. 10 cents Correct response: A
     C. 15 cents
     D. 95 cents

4. State which level of Bloom's Taxonomy is being utilized with this performance indicator.
5. List which part of the state curriculum framework is being referenced with this performance indicator.
6. Score the students' responses to the master test, with the actual master test questions being stored and secured in a computer at the district site.
7. Provide "early warning" proficiency needs for teachers, students, and parents.
8. Describe various effective teaching strategies to accomplish <u>each</u> performance indicator for each subject or course offering.
9. Provide suggestions for the management of the assessment process.
10. Provide immediate "hard copy" results of all tests administered.

IBM COMPUTER OFFICE MANAGEMENT SYSTEM

Our district recently completed the installation of IBM XT and AT computers at each school site and in several offices within the district complex. The district philosophy is that a computer-enhanced well run office will mean enhanced services to students and staff. This philosophy is the foundation for the implementation and expansion of our office management system.

Since the installation phase of the system is quite recent and "fresh," we would like to share a number of suggestions which will hopefully assist others in a similar venture:

1. It cannot be stressed too much that staff training and support are the absolute keys to the success of the system. We had heard too many "horror stories" of districts having $2,300 electronic paper weights and dust collectors on secretaries' desks. It must be determined long before a district actually buys its hardware that the district will provide appropriate training for its personnel. Without it the system will fail.
   We established two priority areas where schools would need and, therefore use, their system: word processing and computerized attendance. One week before clerical office staff members were to report back to work in August, we brought them in for five days of training and paid them their regular hourly rate. The advantages of training all the staff at once were: 1) All heard the same thing at the same time, 2) The training provided a feeling of support and encouragement for all involved, and 3) The secretaries saw their IBM computers for the first time when they arrived that first day and all could and did benefit from each other's questions.
2. Always stress verbally and in writing that secretaries are never alone in terms of computer

questions or problems. In our district we have several "in house" people whom secretaries can call, as well as a local consultant who is very well versed in IBM technology. We make every attempt to answer every question, either through our own staff or someone else's. Support is absolutely critical to the success of the program.

3. In deciding what types and brands of hardware to purchase, the district first needs to determine what it is that the hardware should accomplish. This requires a "meeting of minds" with key planners in the district to decide goals and objectives for the management system. After that has been determined, we recommend that a consultant be brought in to assess the district's needs and what the district sees as its goals and objectives to accomplish the needs; in short, what does the district want to accomplish and what does it need to accomplish it? If possible, we recommend that a "local" consultant be retained who has a good understanding of the district and its community. Such a person is capable of "reading between the lines" of the district's stated goals and can answer questions and spot potential problems that the district may not have ever considered.

   The consultant should make every effort to talk with many secretaries in different job roles to get an accurate picture of the job flow and site logistics which would have a bearing on the type of management system to be installed.

4. At some point between accepting the consultants recommendations and selecting the vendor to provide the office management system, the following questions need to be considered:

   A. What kind of training will the vendor offer the district and what will it cost?

   B. What kind of technical support will the vendor offer: This is the critical service-after-the-sale concept,

and it can make or break the success of the management system.

5. Assume nothing. When planning staff computer training involving consultants, it is very important to periodically check with the consultant to be sure that:
   A. He/she has a complete understanding of what is to be covered in the training.
   B. The agenda reflects appropriate breaks. There should be a ten minute break for every fifty minutes of instruction.
   C. Hands-on activities have been planned.
   D. The necessary hardware and software are being brought by the consultant or someone else.
   E. The necessary number of extension cords are in the training room and are in good condition.
6. "Oh, by the way..." Expect the unexpected and be flexible. No matter how much planning you do, no matter how hard you work, you need to expect the "Oh-by-the-ways." These are those items that, for whatever reason, the consultant did not mention, you could not foresee, or a new piece of technology has just come out on the market and would really enhance your system.
7. After your system is in place, periodically survey the staff to find out what additional training is needed. Our district plans for at least two district-wide workshops a year for our IBM system and periodic school visitations and/or phone calls to determine immediate needs that can be quickly remedied. These individual discussions are done by either our consultant, someone from our office of Instructional Support, or by both.
8. A word about computerized attendance, word processing, and attitudes. The computerized attendance package is being implemented on a voluntary basis this year, with a goal of total implementation by the end of 1987-88. Thus far over 50% of our schools are using it. The initial stages of using the software require a great

deal of time, primarily to input base student data (names, adresses, etc.). We are now providing substitute clerical staff to imput this student data. Once that is done, however, the program is pretty much ready to go. Our user schools have reported positive results both in how it operates and what it has been able to do to enhance student attendance.

In selecting a computerized attendance package, we strongly urge districts to purchase one that has total approval from the state (i.e., provides all the data the state requires for attendance procedures and financial reimbursement).

There are many word processing programs which a district can choose. A major priority is to select a program that is relatively easy to use after training, provides flexibility in terms of what it can do, and is fully backed by the publisher in terms of support (some program publishers have a toll free number to call in case users run into problems).

We noticed an interesting attitude phenomenon which developed among our clerical staff across the district. Several years ago when some of our schools began using computers in the office, the clerical staff people became very concerned about their typewriters being almost totally replaced by these new and unfamiliar machines. Within a year or so the staff wondered how they ever got along without a computer before. The computer applications and possibilities, they said, were virtually endless. Then came the IBM machines last summer. Secretaries became very anxious about the new equipment and said they were comfortable with their current computers.

Now, six months after being introduced to the new office management system, secretaries and administrators are trying to figure out ways of getting more of the new computers into their offices for other staff to use. The

applications and possibilities, they say, are virtually endless.

AND NOW TO SUMMARIZE

In summary, we have found technology to be a wonderful assistance to us in accomplishing the goals and objectives of our district.

If we could give any advice to others contemplating the implementation of technology, it would be the following:

1. Know what you want to accomplish before you buy anything.
2. Talk to many staff throughout your district to assist you in knowing what you want technology to do for you.
3. Hire a consultant, preferably one who knows your district, to assist you in planning.
4. Build a strong staff development program into your computer budget.
5. Talk to other districts who have been through what you want to accomplish.
6. Don't panic when initial reaction to the computer by their users is one of frustration or even anger.
7. Provide individual and group training sessions. Let people know that it is all right to make mistakes, that they probably will, and that making mistakes is one effective way of learning.
8. Encourage users to contact each other when they have problems. No one knows the problems better than those who deal with them everyday, and usually someone has already found the solution.
9. Provide users with names of consultant and district contact people to call when problems develop and when solutions are found.
10. Be supportive of that teacher and clerical computer user: You need to continuously INQUIRE, LISTEN, RESPOND, LISTEN, REPLY, LISTEN...